

Attorney docket OKI 413

IN THE CLAIMS

1. (currently amended): A semiconductor device comprising:

a semiconductor chip having a first main surface formed with electrode pads and a second main surface opposite to the first main surface;

a mounting substrate having a chip mounting surface which has an area wider than an area of the second main surface and is opposed in face to face contact with the second main surface, ~~said mounting substrate having the semiconductor chip being mounted thereon; on said mounting substrate;~~

an encapsulating layer formed on the chip mounting surface so as to cover the semiconductor chip;

wiring patterns electrically connected to the electrode pads and extending in contact with the encapsulating layer from above a first region located above the semiconductor chip, of a surface region of the encapsulating layer to above to a second region, the first region being located on the surface of the encapsulating layer which is located above the semiconductor chip and the second region being located on the surface of the encapsulating layer which surrounds the first region; that surrounds the first region; and

external terminals disposed on the surfaces of the wiring patterns located on the second region; and [[.]]

a first trench formed on the mounting surface and extending from a first side surface of the mounting substrate to a second side surface of the mounting substrate opposite to the first side surface of the mounting substrate, wherein the encapsulating layer is formed in the first trench.

~~wherein trenches extending between a pair of opposite side surfaces of the mounting substrate are defined in the chip mounting surface of the mounting substrate, and the encapsulating layer is formed in the trenches.~~

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2. (currently amended): A semiconductor device according to claim 1, wherein the semiconductor chip is mounted on the mounting substrate along the trenches first trench.

3. (currently amended): A semiconductor device according to claim 1, wherein the semiconductor chip is mounted on the mounting substrate in alignment with the trenches first trench.

4. (currently amended): A semiconductor device according to claim 1, wherein the semiconductor chip is mounted on the mounting substrate with being spaced a predetermined distance from the trenches respectively first trench.

5. (original): A semiconductor device according to claim 1, wherein the side surfaces of the mounting substrate and the encapsulating layer are cut sections.

6. (currently amended): A semiconductor device according to claim 1, further comprising a second trench formed on the mounting surface and extending from a third side surface of the mounting substrate to a fourth side surface opposite to the third side surface of the mounting substrate.

~~wherein the trenches consist of first trenches extending between the pair of opposite side surfaces of the mounting substrate and second trenches extending between the other pair of opposite side surfaces of the mounting substrate;~~

7. (original): A semiconductor device according to claim 6, wherein the corner of the semiconductor chip is mounted in alignment with the corner of the chip mounting surface, which is formed by causing the first and second trenches to intersect.

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8. (original): A semiconductor device according to claim 6, wherein the semiconductor chip is mounted with being shifted in parallel with respect to the first and second trenches respectively.

9. (currently amended): A semiconductor device comprising:

a semiconductor chip having a first main surface formed with electrode pads and a second main surface opposite to the first main surface;

a mounting substrate having a chip mounting surface which has an area wider than an area of the second main surface and is opposed face to face with the second main surface, ~~said mounting substrate having the semiconductor chip being mounted thereon; on said mounting substrate;~~

an encapsulating layer formed on the chip mounting surface so as to cover the semiconductor chip;

wiring patterns electrically connected to the electrode pads and extending in contact with the encapsulating layer from above a first region ~~located above the semiconductor chip, of a surface region of the encapsulating layer to above~~ to a second region, the first region being located on the surface of the encapsulating layer which is located above the semiconductor chip and the second region being located on the surface of the encapsulating layer which surrounds the first region; ~~that surrounds the first region; and~~

external terminals disposed on the surfaces of the wiring patterns located on the second region; ~~and~~ [,]

a protruding portion formed on the mounting surface and extending from a first side surface of the mounting substrate to a second side surface of the mounting substrate opposite to the first side surface of the mounting substrate, wherein the protruding portion is covered with the encapsulating layer.

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~~wherein protruding portions extending between a pair of opposite side surfaces of the mounting substrate are defined in the chip mounting surface of the mounting substrate, and the protruding portions are covered with the encapsulating layer.~~

10. (new): A semiconductor device according to claim 1, wherein the external terminals comprise solder balls.

11. (new): A semiconductor device according to claim 9, wherein the external terminals comprise solder balls.

12. (new): A semiconductor device according to claim 1, wherein the second region is located on the surface of the encapsulating layer above a portion of the mounting substrate outside of the semiconductor chip.

13. (new): A semiconductor device according to claim 9, wherein the second region is located on the surface of the encapsulating layer above a portion of the mounting substrate outside of the semiconductor chip.

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